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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* MANFRED HEISLER,  
JOHANN SCHUSTER, ALOIS SCHLIERF,  
and FRIDOLIN STARY

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Appeal 2008-5215  
Application 10/802,455  
Technology Center 1700

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Decided: September 29, 2008

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Before CHARLES F. WARREN, JEFFREY T. SMITH, and  
LINDA M. GAUDETTE, *Administrative Patent Judges*.

WARREN, *Administrative Patent Judge*.

DECISION ON APPEAL

Applicants appeal to the Board from the decision of the Primary Examiner finally rejecting claims 1 through 17 in the Office Action mailed October 24, 2006. 35 U.S.C. §§ 6 and 134(a) (2002); 37 C.F.R. § 41.31(a) (2006).

We affirm the decision of the Primary Examiner.

Claim 1 illustrates Appellants' invention of a process for preparing organopolysiloxane compositions, and is representative of the claims on appeal:

1. A process for preparing organopolysiloxane compositions (A) having a viscosity measured at 25°C of at least 500 Pa·s, comprising mixing and kneading organopolysiloxanes (O) and fillers (F) in a first process stage in a kneading cascade having at least two kneading chambers which are arranged in series adjacent one another, each containing two kneading tools having parallel axes and capable of being driven in co-rotating or counter-rotating directions, said chambers connected to one another by means of openings through which material passes in a direction transverse to the axes of the kneading tools, at least the first kneading chamber having a feed opening and the last kneading chamber having a discharge opening, to provide a raw organopolysiloxane mixture, and, in a second process stage, kneading and degassing the raw mixture in a reciprocating kneader.

The Examiner relies upon the evidence in these references (Ans. 3):

Schuster	US 5,854,343	Dec. 29, 1998
Mathur	US 2003/0229175 A1	Dec. 11, 2003

Appellants request review of the ground of rejection of claims 1 through 17 under 35 U.S.C. § 103(a) as unpatentable over Mathur in view of Schuster. Ans. 3; App. Br. 3.

Appellants argue the claims as a group and further separately argue claim 13. App. Br. 3 and 8. Thus, we decide this appeal based on claims 1 and 13. 37 C.F.R. § 41.37(c)(1)(vii) (2006).

The principal issue in this appeal is whether the Examiner has carried the burden of establishing a prima facie case of obviousness which turns on the issues addressed below.

The plain language of independent claim 1 specifies a process for preparing any organopolysiloxane composition comprising at least the steps, among other things, mixing any organopolysiloxane and any manner of any

number of “fillers” in a first process stage using any kneading cascade having the specified components to form a raw organopolysiloxane mixture that is kneaded and degassed in a second process stage using any reciprocating kneader. There is no limitation specifying the raw mixture must be directly transferred from the kneading cascade to the reciprocating kneader. Dependent claim 13 specifies the “filler is a prehydrophobicized filler.”

We find Mathur evinces it was known in the art to reduce silanol functionality of fillers with a treating agent to form hydrophobicized fillers when the filler is used in admixture with high viscosity silicone polymers to form heat-vulcanizable compositions. Mathur ¶¶ 0002-0004. “[H]eretofore, the treating agent has been added either directly to the silica before the premix forming step or during the premix forming step under conditions of high shear mixing.” Mathur ¶ 0005. Mathur further evinces “[a] treated premix is a damp composition that is more difficult to store or to transport than a dry mix,” which “place limitations on premix use and marketability,” and thus, “treated premix is prepared and immediately charged into a subsequent extrusion step.” Mathur ¶¶ 0006-0007.

We find Mathur would have disclosed to one of ordinary skill in this art a continuous process comprising mixing a premix of filler and high viscosity silicone polymer with additional high viscosity silicone polymer in a co-rotating intermeshing twin screw extruder, e.g., extruder 112, and kneading the raw mixture in a single shaft reciprocating extruder, e.g., extruder 114. Mathur, e.g., ¶¶ 0009, 0023, 0024, and 0036, and Fig. 2. The filler can be either untreated or pretreated. Mathur, e.g., ¶¶ 0019 and 0036.

We find Schuster would have disclosed to one of ordinary skill in this art a process comprising mixing high viscosity organopolysiloxanes and pretreated fillers are blended and kneaded in a kneading cascade which has components meeting the limitations for a kneading cascade in claim 1. Schuster, e.g., col. 2, ll. 30-54, col. 5, l. 60 to col. 6, l. 2, and Fig. 1. “The kneading machine used according to the invention permits control of the intensity of the kneading process and of the residence time, since rotational speed and sense of rotation of the kneading tools in the individual kneading chambers can be adjusted at will independently of one another.” Schuster col. 5, ll. 31-36. Schuster evinces it was known in the art that “screw reactors, i.e., oscillating reciprocating compounder and twin screw extruder do not permit sufficiently intensive kneading of the silicone compositions, since the insufficiently long residence time of the compositions in the reactor chamber can be varied only to a minor extent.” Schuster col. 1, ll. 28-33. Schuster illustrates the advantages of the disclosed kneading cascade over a twin-shaft extruder in Example 1 and comparative Example 2. Schuster col. 6, l. 52 to col. 7, l. 48.

We determine the combined teachings of Mathur and Schuster, the scope of which we determined above, provide sufficient evidence supporting the Examiner’s case that the claimed invention encompassed by claims 1 and 13, as we interpreted these claims above, would have been prima facie obviousness to one of ordinary skill in the art of formulating silicone compositions familiar with the requirements for mechanically mixing the ingredients.

We agree with the Examiner's findings of fact and determination based thereon that it would have been prima facie obvious to modify Mathur's process by replacing the co-rotating intermeshing twin screw extruder used therein with Schuster's kneading cascade in the reasonable expectation of improved control of the kneading process. Ans. 3-7. *See, e.g., KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1740 (2007) (a patent claiming a combination of elements known in the prior art is obvious if the improvement is no more than the predictable use of the prior art elements according to their established functions); *In re Kahn*, 441 F.3d 977, 985-88 (Fed. Cir. 2006); *In re O'Farrell*, 853 F.2d 894, 903-04 (Fed. Cir. 1988) ("For obviousness under § 103, all that is required is a reasonable expectation of success." (citations omitted)); *In re Keller*, 642 F.2d 413, 425 (CCPA 1981) ("The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference . . . . Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art."); *In re Sovish*, 769 F.2d 738, 743 (Fed. Cir. 1985) (skill is presumed on the part of one of ordinary skill in the art).

Upon reconsideration of the record as a whole in light of Appellants' contentions, we are of the opinion that Appellants have not successfully rebutted the prima facie case. Appellants submit there is no motivation to combine Mathur and Schuster because Mathur uses untreated fillers and Schuster uses pretreated fillers, and Schuster further teaches twin screw extruders and reciprocating kneaders are unsatisfactory and are to be avoided. Thus, Appellants contend the references cannot be physically

combined and both teach away from the claimed invention. App. Br. 5-7 and 8; Reply Br. 1-4.

We cannot subscribe to Appellants' contentions. Mathur simply does not teach away from using pretreated filler. Indeed, Mathur teaches that a premix containing a pretreated filler can be directly charged into a subsequent extrusion step, and, as the Examiner points out, the reference discloses an example illustrating the use of a pretreated filler as specified in dependent claim 13 and encompassed by independent claim 1. Ans. 6; *see above* p. 3. Schuster does teach that a kneading cascade permits adjustments in process parameters where twin screw extruders and reciprocating kneaders do not. Thus, as the Examiner submits, one of ordinary skill in this art desiring more control over process parameters would use a kneading cascade in place of a twin screw extruder and a reciprocating kneader. Ans. 5-6. Therefore, this person would have recognized that a kneader cascade can be substituted for either of these devices and would have modified Mathur to replace the twin screw extruder with a kneading cascade as the first apparatus component in Mathur's process because Schuster shows the benefits of using a kneading cascade to initially mix organopolysiloxane and fillers. Contrary to Appellants' contention, the combination of Mathur and Schuster does not require that Schuster's kneading cascade must be added as a component to Mathur's apparatus components that include a twin screw extruder. Reply Br. 4. *Keller*, 642 F.2d at 425 ("The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference.").

Accordingly, one of ordinary skill in this art, routinely following the combined teachings of Mathur and Schuster, would have reasonably arrived at the claimed processes encompassed by claims 1 and 13 with the predictable result of improving process performance. *See, e.g., KSR*, 127 S. Ct. at 1740. We are not convinced otherwise by the comparative evidence in the Specification relied on by Appellants. App. Br. 7-8.

We find that the process of Example 1 employs a kneading cascade and a reciprocating kneader as claimed in obtaining Sample 2. Spec. 12-13 and 15, and table. However, Sample C1 was obtained using a kneading cascade as the sole processing apparatus in Example 1, and Samples C3 and C4 were obtained using a reciprocating kneader as the sole processing apparatus in Example 2. Spec. 12 and 13-15, and table. We fail to find, and Appellants have not otherwise established, that any of the comparisons involve a comparison of a claimed process and a process of Mathur using a co-rotating intermeshing twin screw extruder *and* a reciprocating kneader. App. Br. 7-8. Thus, the evidence provided in the Specification is not based on a comparison of a claimed process with a process of Mathur, which is the closest prior art, in a manner addressing the thrust of the ground of rejection. *See, e.g., In re Baxter Travenol Labs.*, 952 F.2d 388, 392 (Fed. Cir. 1991) (“[W]hen unexpected results are used as evidence of nonobviousness, the results must be shown to be unexpected compared with the closest prior art” (citation omitted); *In re Burckel*, 592 F.2d 1175, 1179-80 (CCPA 1979) (the claimed subject matter must be compared with the closest prior art in a manner which addresses the thrust of the rejection); *In re Dunn*, 349 F.2d 433, 439 (CCPA 1965) (“[W]e do not feel it an unreasonable burden on



appellants to require comparative examples relied on for non-obviousness to be truly comparative. The cause and effect sought to be proven is lost here in the welter of unfixed variables.”).

Furthermore, while the results reported in the table in the Specification show that Sample 2 has better properties than the Comparative Samples C1, C3, and C4, Appellants have not explained the practical significance of the results to one of ordinary skill in this art and why this person would have found the results unexpected in light of the combined teachings of Mathur and Schuster. App. Br. 7-8. *See, e.g., In re Geisler*, 116 F.3d 1465, 1470 (Fed. Cir. 1997); *In re Merck*, 800 F.2d 1091, 1099 (Fed. Cir. 1986); *In re Longi*, 759 F.2d 887, 897 (Fed. Cir. 1985); *In re Lindner*, 457 F.2d 506, 508 (CCPA 1972); *In re Klosak*, 455 F.2d 1077, 1080 (CCPA 1972); *In re D’Ancicco*, 439 F.2d 1244, 1248 (CCPA 1971).

Accordingly, based on our consideration of the totality of the record before us, we have weighed the evidence of obviousness found in the combined teachings of Mathur and Schuster with Appellants’ countervailing evidence of and argument for nonobviousness and conclude that the claimed invention encompassed by appealed claims 1 through 17 would have been obvious as a matter of law under 35 U.S.C. § 103(a).

The Primary Examiner’s decision is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

Appeal 2008-5215  
Application 10/802,455

AFFIRMED

ls/cam

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